AePW-3 Telecon

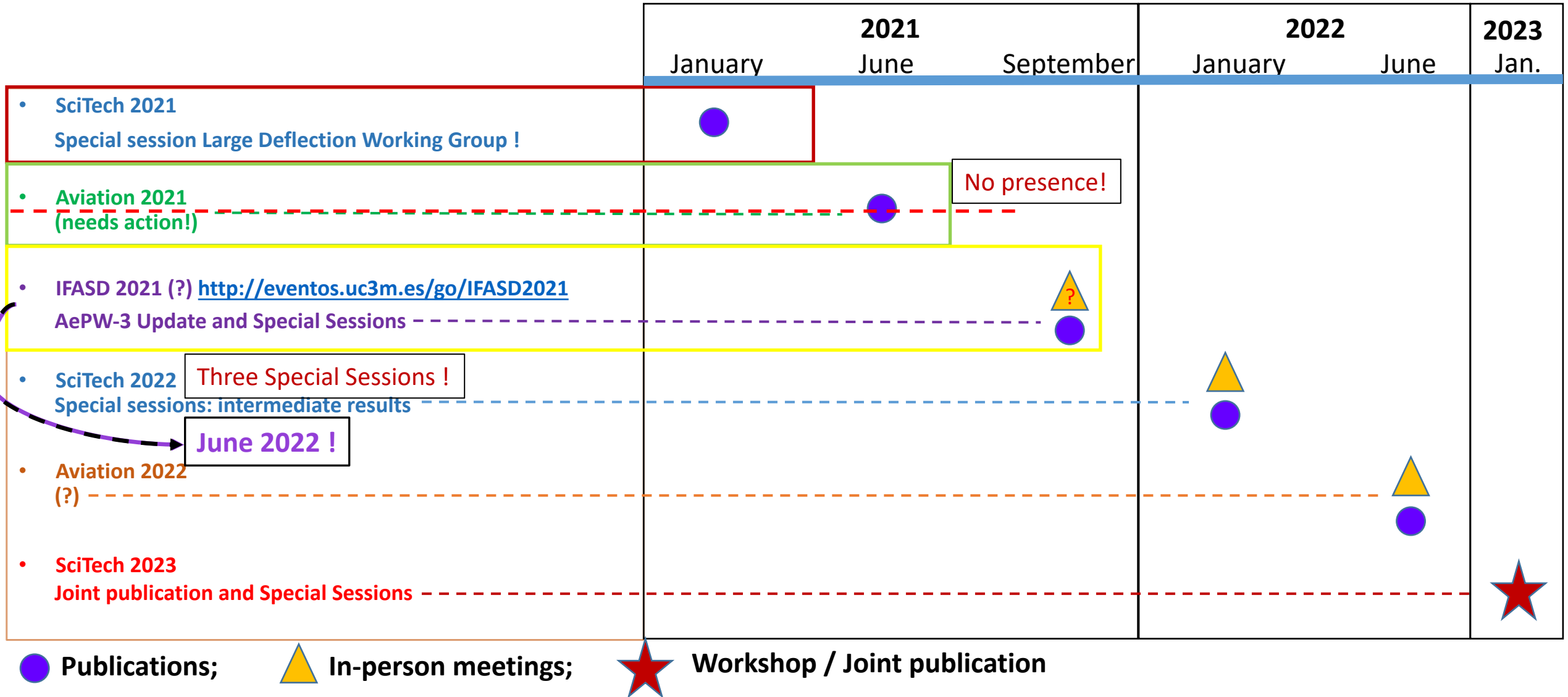
March 4, 2021

(https://nescacademy.nasa.gov/workshops/AePW3/public)

Agenda: March 4, 2021

- AePW-3 Schedule: SciTech 2021, Aviation 2021, IFASD 2021, SciTech 2022
- AePW-3 group telecons are held on first Thursday each month
- Large Deflection Working Group, Markus Ritter
  - Telecons are held on second Thursday each month.
- Flight Test Working Group, Jeff Ouellette
  - Telecons are held on third Thursday each month.
- High Angle of Attack Working Group, Pawel Chwalowski
  - Telecons are held on fourth Thursday each month.
- High Speed Working Group, Eric Blades
- Next AePW-3 Telecon: April 1, 2021

Toward the next Aeroelastic Prediction Workshop (AePW-3): Requesting Conference-Associated Support



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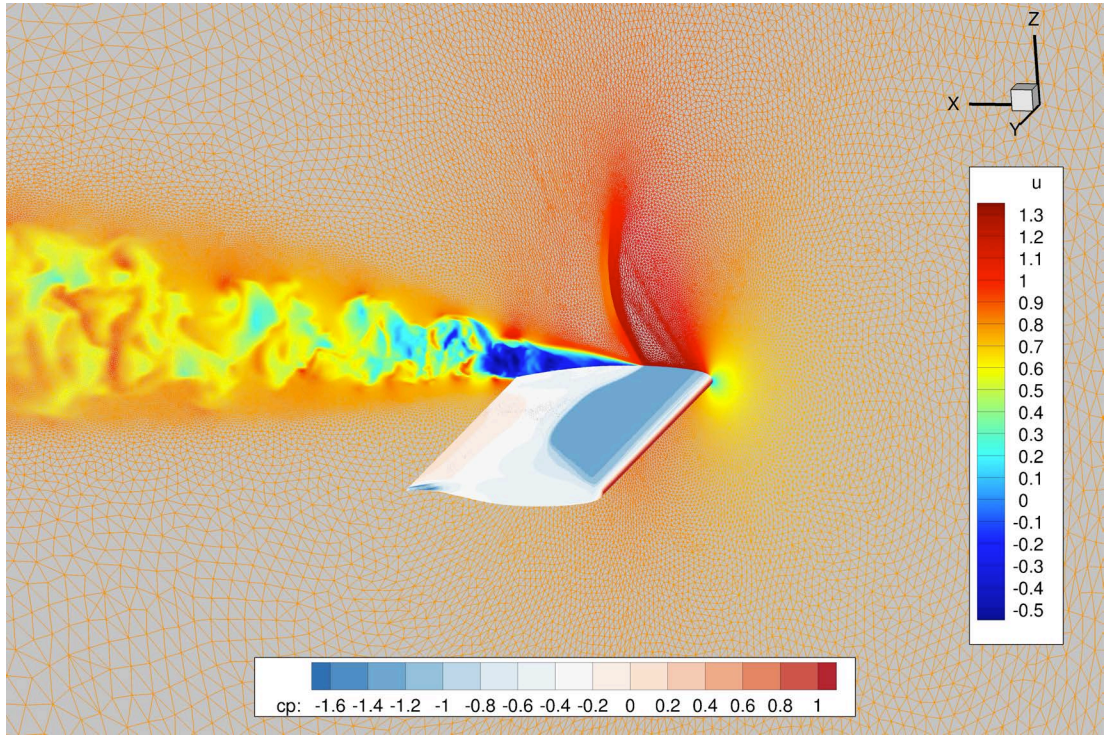
High Angle Working Group

- Three potential topics for AePW-3 High Angle Working Group
  - Buffet analysis at Mach 0.8, AoA = 5deg: rigid wing, unsteady flow
  - Forced oscillation: frequency ???
  - Flutter prediction: time domain vs. frequency domain

BSCW: M=0.80, alpha=5deg

Animation: FUN3D DDES Solution, Rigid Body

Wing Only



20.2M nodes

AIAA-2016-3323

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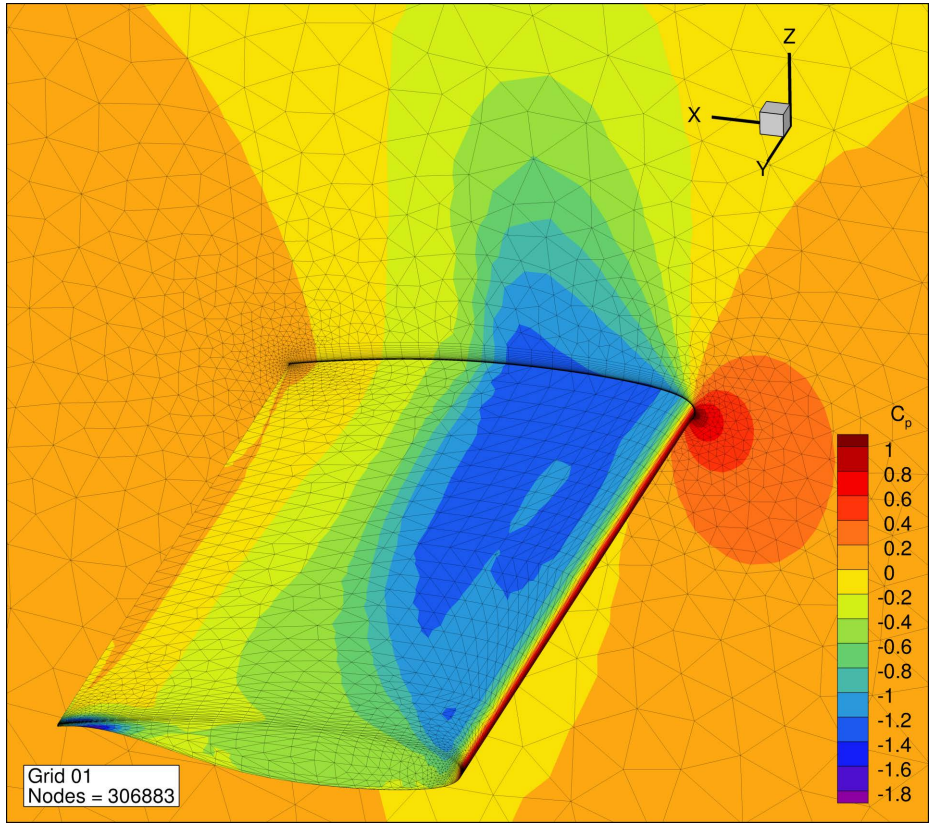
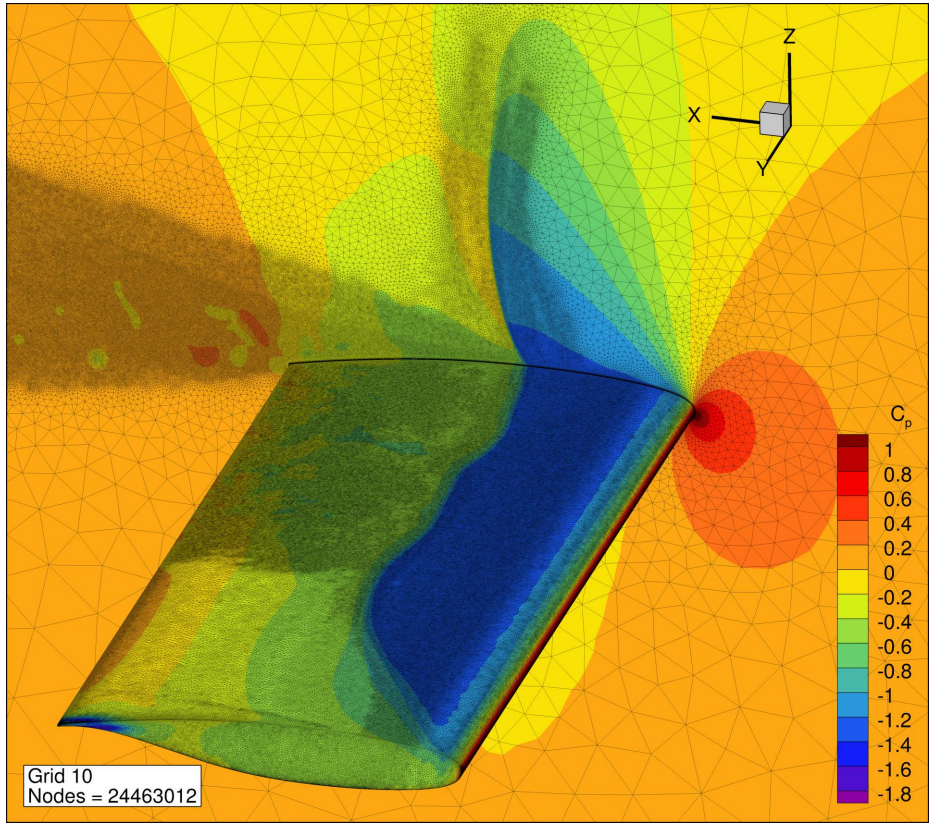
AIAA-2020-3219

BSCW: M=0.80, alpha=5deg

FUN3D DDES Solution+ Pointwise, Rigid Body

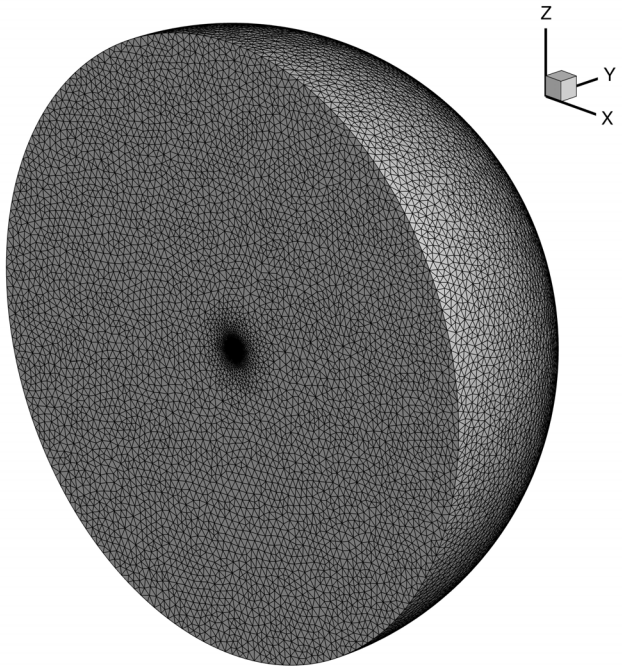
Wing Only

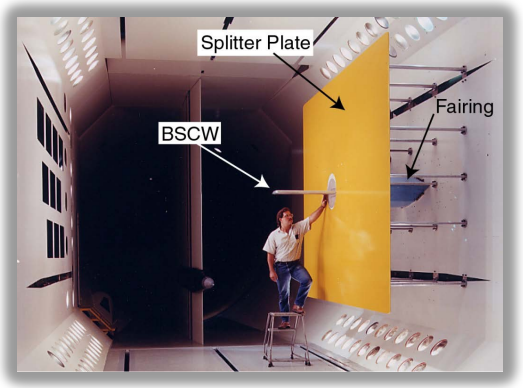


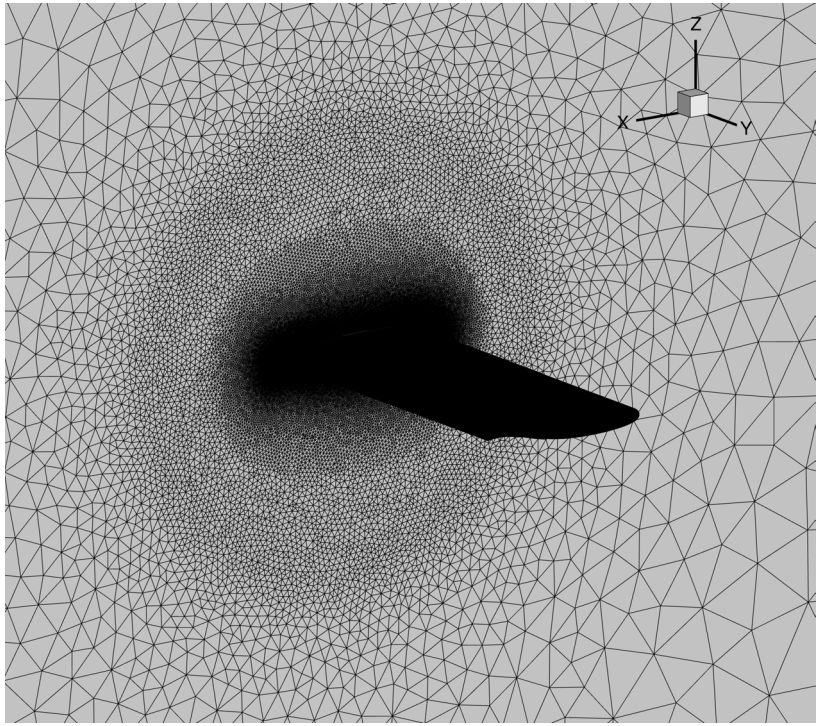


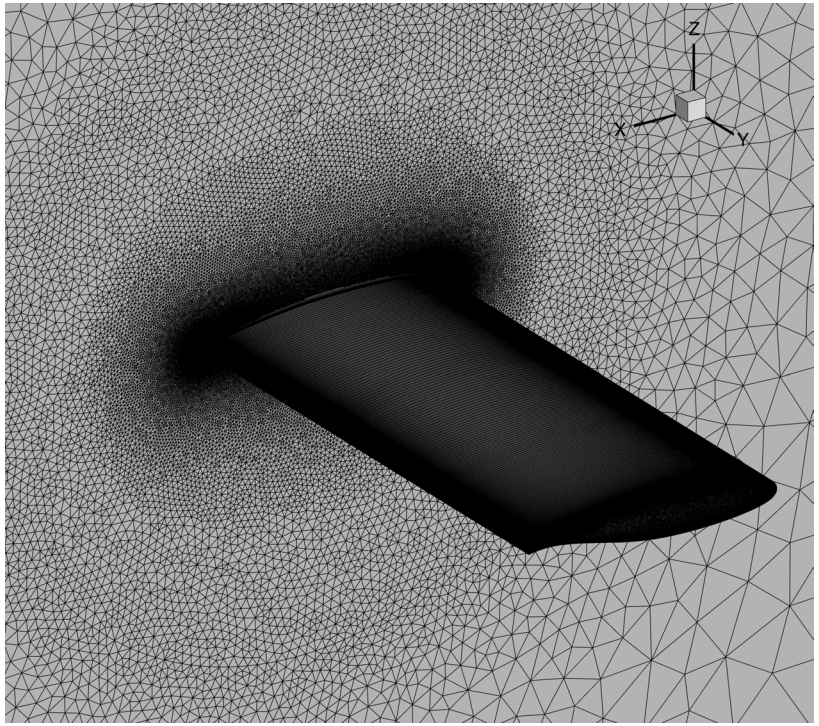
- Grid interpolation based on pointwise isotropic point sources.

- Error is estimated by comparing the interpolated value of Mach from neighboring nodes to its actual value. Then point sources are generated requesting new grid spacing based on the estimated error.









- ✓ Coarse, Medium, Fine grids constructed
- ✓ FUN3D steady state convergence
- ➢ Aeroelastic solutions next